Why do Individuals Continue Using Mobile Payments – A Qualitative Study in China

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Abstract

Many financial and mobile service providers are viewing mobile payment (MP) as a strategic growth area for their business. In order to realize this anticipated growth potential, users must initially adopt and then continue to use MP systems. However, a rich and detailed user perspective of MP continuance behavior is lacking. We address part of this research gap by content-analyzing interview transcripts of 38 MP users. The findings indicate that perceived usefulness and risk, disconfirmation, satisfaction, subjective norm, and habit are important when users making MP continuance decisions.

1. Introduction

The mobile payment (MP), referring to any payment where a mobile phone is used to "initiate, authorize, and confirm an exchange of financial value in return for goods and services" [1], has been developed and introduced to consumers all over the world [2]. Many practitioners as well as researchers believe that MP has the potential to become a "killer" application in the payment industry [3]. However, for MP to achieve its full potential, there must be widespread use by consumers as a prerequisite [1]. Therefore, it is of practical importance to understand individual decisions to use or disuse MP. Such an understanding may lead to the development of more effective MP technology and services [4].

The IT use literature generally divides usage into two phases in time [5]: the initial use (i.e., IT acceptance or adoption) and continued use (i.e., IT continuance). IT acceptance precedes IT continuance. The literature suggests that individual decisions on IT continuance qualitatively differ from those of IT acceptance. As such, it is essential to study both MP acceptance and continuance in order to develop a full understanding of its IT usage characteristics. However, we find, after an extensive literature search, that while there are rich findings on MP acceptance [e.g., 3, 6], MP continuance research is scarce. Exceptions are Zhou [7] and Chen and Li [8].

Althoug there are voluminous continuance studies in other IT contexts, such as online shopping [9], mobile Internet [5], and online banking [10], MP continuance deserves its own attention because of some idiosyncratic characteristics. First, MP involves financial transactions, and people are particulary sensitive to risk associated with financial frauds. This may set the continued use of MP apart from that of non-financial ITs. Second, MP technologies are qualitative different from traditional financial ITs (e.g., ATM and PC-based banking) in that they render the access to financial services ubiquitous. Such ubiquity was not available with traditional financial ITs. The ubiquity on the surface level may just bring more convenience to MP users. However, as Srpoull and Kiesler acutely [11] point out, while a new technology may enable people do old things more efficiently, the more important effects are that the technology may let people do new things that were impossible or infeasible with the old technology, so called the second-level effects. "These second-level effets often emerge somewhat slowly as people renegotiate changed patterns of behavior and thinking" [11]. Therefore, we argue that the ubiquitous nature of MP services may set the continued use of MP apart from that of traditional financial ITs and the research of MP continuance deserves its own place in the IT continuance literature.

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While the studies from Zhou [7] and Chen and Li [12] shed some light on the unique nature of MP continuance behaviors, both studies are quantitative in nature. Zhou's study draws on the IS Success Model and Chen and Li's study is based on the IT Continuance Model. The constructs in the IS Success Model and IT Continuance Model are deductively developed from other grounded theories (e.g., information theory and expectation-confirmation theory). Therefore, it is unclear (1) how well these theoretically derived constructs correspond to the factors that MP users consider when making the continued use decisions and (2) what the interpretations of these theoretically derived constructs are from MP users' perspective. The answers to these questions may not only enrich our undestanding about extant MP contianuance literature but also point to the possible extensions to the existing theoretical frameworks. Our study attempts to answer these questions by conducting a qualitative study. A number of IS scholars suggest that qualitative methods facilitate rich, in-depth understandings about the IS phenomena examined [13-16].

2. Theoretical foundation

By reviewing the extant literature on IT continuance, we find that the IT Continuance Model, originating from the work of Bhattacherjee [17], is regarded as the seminal theory for IT continuance research [18]. The model has been repeatedly confirmed and adopted to explain continuance behaviors associated with a wide range of IT applications, such as mobile Internet [5], online banking [10], and MP services [8]. We, therefore, employ the IT Continuance Model as the theoretical foundation. The IT Continuance Model was first proposed by Bhattacherjee [17]. The original model was based on the expectation-confirmation theory. Since then, Bhattacherjee and other researchers [9, 19] have improved the original model by integrating two more theoretical perspectives—the theory of reasoned action and the theory of habitual response—and have finally arrive at the latest model—Unified Model of IT Continuance (i.e., UMIC). As Bhattacherjee himself claims, the UMIC is a "comprehensive theory of IT continuance" [19] and thus has more explanatory power for IT continence behaviors.

2.1. Perceived usefulness

Drawing from the theory of reasoned action (TRA) [20] and theory of planned behavior (TPB) [21], the UMIC proposes that individual IT continuance behavior is a result of conscious intention concerning that behavior. An individual's subjective evaluation of usefulness of an IT (i.e., perceived usefulness) is one of the important determinants of the intention. This evaluation is based on the consequences of continued IT usage and the desirability of these consequences [22].

2.2. Dis/confirmation

According to the theory of disconfirmation of expectations (TDE) [23, 24], individuals have product or service performance expectations before they actually experience the product or service. These expectations serve as a set of standards against which individuals evaluate their product or service experience. When the experience meets expectations, a zero disconfirmation (or confirmation) occurs and individuals feel satisfied with the product or service; when the experience exceeds expectations, a positive disconfirmation occurs and individuals also feel satisfied with the product or service. However, when the experience falls short of expectations, a negative disconfirmation occurs and individuals feel dissatisfied with the product or service. Following this logic, the UMIC suggests that individuals have certain expectations related to the performance of an IT before they adopt it. The disconfirmation of these pre-adoption expectations impacts users' satisfaction regarding their IT experience.

2.3. Satisfaction

The TDE [23, 24] also suggests that consumer repurchase intentions and behaviors are largely shaped by their satisfaction, an affective or emotional state resulting from a product or service experience [25]. The more satisfied consumers are, the more likely they will repurchase the product or service [26]. Because of the similarity between consumer repurchase decisions and individual IT continuance decisions, Bhattacherjee and Lin [27] define satisfaction as an IT user's affective state that is an emotional reaction to her IT usage experience. They propose that satisfaction affects IT continuance intentions and behaviors.

2.4. Subjective norm

The TRA and TPB also posit that the normative expectations of important others and motivation to comply with these expectations result in perceived social pressure (i.e., subjective norm), which, in turn, influences behavioral intention [21, 28]. Consistent

with this line of arguments, the UMIC suggests that subjective norm impacts IT continuance intentions.

2.4. Habit

Habit refers to an automatic pattern of behavior in reaction to environmental cues [29]. A number of IS researchers argue that IT usage may develop into a habit [30, 31]. As IT usage gradually becomes habitual, "reflective cognitive processing dissipates over time, leading to non-reflective, routinized behavior" [32]. The habitual use of IT can be triggered by the tasks which an IT is used to perform and/or the IT itself [33]. Thus, IT continuance behavior may be out of a habitual response rather than a reasoned decision making process as prescribed by the TRA and TPB. Consistent with this line of arguments, the UMIC suggests that the habit of IT usage affects IT continuance behaviors.

3. Research methodology

3.1. Study context

Our study involved interviews of MP users in China conducted in the second quarter of 2014. The telecommunications infrastructure in China provides the technical base for large scale diffusion of MP technology. By the end of 2014 second quarter, the number of mobile phone users in China reached 1.26 billion, with a penetration rate of 92.6 mobile phones per 100 people [34, 35]. Of these users, 824 million (65%) accessed the Internet via their mobile phones [34, 35]. MP technology first appeared in China as early as 1999, but became generally available in early 2013. MP technology is now used in vending machines, taxi service, ticketing, and online shopping. According to iResearch [36], Alipay (owned by Alibaba), Unionpay (owned by the government), and Tenpay (owned by Tencent) dominate China's MP market with over 90% of the total market share.

3.2. Sample and data collection

Snowball sampling was used to recruit study participants [37]. It started with an initial sample of 10 student volunteers from a major university in southwest China. They all had prior experience making MP transactions. Students were awarded extra credit equal to five percent of the total course grade for their participation. They were interviewed and then asked to name other potential participants, who should not be students of the university and must also have prior experience with MP technology. The snowball sampling was stopped at the point of data saturation; that is, no more new information or insights were generated from the interviews [37, 38]. We interviewed 38 MP users. Table 1 provides the demographic characteristics of the sample. The sample reported that they used either Alipay or Tenpay for MP.

Table 1. Demographics of the sample

Measure	Item	Frequency
Gender	Female	19
	Male	19
Age	<18 (years old)	2
	18-27	16
	28-37	9
	38-47	9
	>47	2
Education level	High school or less	6
	Associate degree	7
	Bachelor degree	23
	Masters degree or above	2
Average personal expenses per month	<1000	5
	≥1000 and <2000	13
	≥2000 and <3000	7
	≥3000 and <4000	5
	≥4000 and <5000	6
	≥5000	2
Occupation category	High school student	2
	College student	10
	Education	4
	Finance and banking	4
	Government agencies	3
	Construction	2
	Others (e.g., gardening, graphic design, hair design, IT services, pharmaceutical company, import/export)	10
	Unemployed	3

3.3. Interview

As this study aimed for an in-depth understanding of individual MP continuance decisions, interviews became the primary data source [39]. This is primarily because decision-making is a cognitive process that takes place within a person's head. To get qualitative

data about what information plays what roles in the decision, the only feasible way is to "let decision-makers talk about it".

The interviews were conducted in Chinese since all participants were Chinese. The interviews were performed via phone because participants were from all over the country and it was impractical to meet with each participant face-to-face. Before starting the interview, we informed participants that their participation was entirely voluntary. They could stop the interview any time and refuse to answer any questions they felt uncomfortable with. We also informed them that the interview would be audiotaped and asked whether they agreed to do so. No participants refused. The interview was kept anonymous since it was performed via phone and we did not ask for any personally identifiable information during the interview.

The interview was semi-structured to allow participants to openly express their opinions [40] and discuss or elaborate on important issues they recalled in depth [41]. The initial version of interview questions was pilot-tested with two business doctoral students. Modifications were made based on their feedback. The final version of the interview questions was composed of four sections: First, participants were asked two questions about their cellphones. Second, they were asked to recall the situation where they used MP technology for the first time. Third, they were asked whether they continued to use MP technology and why they continued to use or discontinued to use the technology. In addition, they were asked whether they planned to continue to use MP technology in the near future and why they planned so. Probing questions followed the initial answers to prompt participants to expand and elaborate on their responses. Lastly, they were asked to report some demographic information. All of the interviews were audiotaped and then transcribed into a text document.

3.4. Data coding

The interview transcripts were content-analyzed. The unit of analysis was a single simple sentence or its equivalent, which represents a complete thought allowing for meaningful interpretations. This coding technique is widely used in IS research [42, 43]. Following the steps recommended by Krippendorff [37] and Kishore et al. [43], we developed an coding scheme based on UMIC, which suggests five coding categories, including perceived usefulness, disconfirmation, satisfaction, subjective norm, and habit.

The initial analysis was performed by one of the authors who read each interview transcript carefully. The coding units were identified, extracted, and then categorized in accordance with the initial coding scheme. The units, falling into the same category, were further classified into smaller groups—subcategories—whenever possible. Some units, which did not fit into one of initial categories, were carefully examined and interpreted. A new category and its subcategories were added accordingly. About one month later, the same author recoded the interview transcripts again. Recoding results were very close to those of the first-round coding, with an agreement more than 90 percent. Following this confirmative round of coding, we asked an independent coder to recode the interview transcripts using the coding scheme developed during the research effort. The coder was a graduate student knowledgeable in MP technology research but not involved in the study. The comparison of the coding results by the faculty coder and independent coder yielded a kappa reliability greater than 75%. The coding disagreements were discussed and resolved jointly by the faculty coder and independent coder. This round of data coding resulted in an updated coding scheme (shown in Table 2).

Table 2. Updated coding scheme

Categories	Subcategories
Perceived usefulness	Perceived transaction convenience
	Perceived transaction speed
	Ubiquity
	Cost advantages
Perceived risk	Security risk
	Financial risk
	Privacy risk
Dis/confirmation	Dis/confirmation of perceived usefulness
	Dis/confirmation of perceived risk
Satisfaction	Satisfaction due to the confirmation of performance expectations of MP technology
	Satisfaction due to the negative disconfirmation of risk expectations transactions
Subjective norm	Not available
Habit	Habit of using MP technology
	Habit of using other payment methods

4. Findings

4.1. Continued use of MP

Of the 38 interviewees, 33 (87%) chose to continue using MP technology, whereas 5 (13%) chose to discontinue use. Table 3 provides descriptive statistics

of use frequency, use context, and maximum amount paid by the interviewees who chose to continue using MP technology.

Table 3. Descriptive statistics for participants who continued MP technology use

Measure	Item	Frequency
Use frequency	1~5 (times per month)	20
	6~10	5
	>10	8
Use context	Online shopping	31
	Telephone and utilities bill pay	23
	Group buying	11
	Money transfer	10
	Investing and wealth management	4
	Airline and train tickets	3
Max. amount paid	<100	4
	≥100 and <1000	13
	≥1000 and <2000	5
	≥2000 and <3000	3
	≥3000	5

Note: 1. One interviewee did not report use frequency; 2. Six interviewees did not report the maximum amount paid using MP technology.

4.2. Perceived usefulness

In the context of MP continuance, four specific perceived usefulness dimensions emerged from interviewees' discussion: perceived transaction convenience (PTC), perceived transaction speed (PTS), cost advantages, and ubiquity.

The interviewees mentioned that they consciously evaluated the payment process of MP technology against that of cash payments when considering whether to continue using MP technology. They viewed MP technology as being more convenient than cash payments in three circumstances. First, when the payment involves coins, MP technology is more likely to be used since it is very inconvenient to carry coins. As interviewee #5 (male, 21 years) described, he often uses MP technology for vending machine purchases because he does not like to get a handful of coins as change1. Second, when the payment involves a large quantity of money, MP technology is also more likely to be used because it is troublesome and insecure to carry large quantities of currency. As interviewee #26 (male, 31 years) described, due to the availability of MP technology, there is no need to carry large amounts of cash. Paying by cash sometimes is just impractical. For example, if he needs to pay one or two million CNY, it is impossible to carry a truckload of cash. Third, if a cash payment incurs substantial physical effort, such as traveling some distance and waiting in line, individuals would rather choose MP technology. As interviewee #28 (Female, 19 years) described, the ATM is located far from where she lives. She does not want to travel that distance just to get some cash.

The interviewees mentioned that they also evaluated the payment process of MP technology against that of PC-based payments and concluded that MP technology was much simpler and more convenient. The process of PC-based payments involves many steps and requires too much information entry. Individuals have to remember and enter at least two passwords, one for logging into the account and the other for approving the payment. In addition, many PC-based payment services are set up with an upper limit on the amount that can be paid in each transaction. In the case where the payment exceeds the upper limit, USB keys, which are issued by PC-based payment service providers and pre-installed with security software, have to be employed. MP technology, on the other hand, involves fewer steps and requires only one password. Some MP applications (e.g., Alibaba) offer a service named "payment-without-password". That is, no password is needed in the transaction if users turn on this service function. As interviewee #8 (female, 26 years) described, PC-based payments are burdensome and she has to enter a lot of information for every transaction, whereas MP technology often does not even need a password.

The interviewees stated that the transaction speed was an important factor to consider in their MP continuance decision. They used PC-based payments as the primary benchmark for the transaction speed evaluation. Because of the simple payment process, the interviewees felt that the transaction with MP technology was fast. This advantage was especially salient in the situation where the network connection was not stable or bandwidth was scarce. As interviewee #34 (female, 30 years) described, if the network environment is really bad and she has to go from one webpage to another to complete the transaction, the process will be painfully slow. In addition, the interviewees found that booting-up and shutting-down a PC involved in the PC-based payment process was annoying and a waste of time. MP technology, on the other hand, does not have such issues. Mobile phones are always-on as long as the

[1] The interview was conducted in Chinese. For presenting interviewees' responses in this paper, we translated them into English. The forward-backward method was employed for translation.

battery has sufficient charge. As interviewee #19 (female, 19 years) described, she chooses to use MP technology more often than PC-based payments because she does not like to wait for the computer to boot up.

The interviewees reported that there were cost advantages associated with MP technology. First, large discounts are given. To promote MP usage, major MP companies, such as Alibaba and Tencent, have offered heavy discounts in certain business domains, such as taxi service, hotels, and restaurants. As one interviewee #34 (female, 30 years) described, she wanted to make a restaurant reservation. The original price was CNY 100, but the discounted price would be CNY 70 if she used Tenpay. Therefore, she chose Tenpay. Second, MP users are not charged any transaction fees for money transfer. If individuals make a money transfer via offline or online banking, transaction fees ranging from 0.2%-1% of the amount transferred will be collected. MP transactions are exempt from such fees. As interviewee #26 (male, 31 years) described, he always uses MP for money transfers because there are no fees. Third, an MP account can be linked to a money market account if individuals choose to do so. Funds in the MP account can be used in the same way as a checking account and earn the higher interest rates often associated with money market accounts. As interviewee #21 (female, 19 years) described, she keeps some money in her MP account because it earns interest.

The interviewees reported that MP had a great advantage in ubiquity. Individuals have to sit in front of a desktop or laptop and stay at one specific location to access the services of PC-based payments. On the other hand, the small, lightweight nature of mobile phones makes them convenient to carry wherever the user goes. This portability, in combination with the increasing ubiquity of the mobile Internet, enables individuals to access MP virtually anytime and anywhere. As interviewee #12 (female, 32 years) described, with MP, she is able to make a payment when siting on the sofa, lying in bed, or even being in the restroom. The ubiquity of MP was particularly appreciated by interviewees whose work involves frequent travel. As interviewee #37 (male, 41 years) described, he was on a business trip and realized there was a problem with his hotel reservation after arrival. He was able to instantly make another reservation using MP technology.

4.2. Perceived risk

The interviewees perceived some risk associated with using MP services. These risk concerns were so high among several interviewees that they discontinued to use MP services. Perceived risk refers to possible unfavorable consequences of using a product or service [44] and prior literature conceptualizes perceived risk as a construct with multiple dimensions, such as performance, financial, and psychological risks [45]. Prior studies show that salient risk dimensions vary from one IT context to another[46, 47]. Three specific dimensions of perceived risk were salient in the interviewees' cognition when making MP continuance decision, including performance (security), financial, and privacy risks. Performance risk refers to the possibility that an IT, such as MP technology, fails to perform tasks as designed [46, 47]. Because the interviewees' discussion on performance risk was largely focused on security issues, we renamed "performance risk" as "security risk." The interviewees were concerned that the authentication and authorization procedures in the MP applications were not sufficiently sophisticated and there were not adequate protections against computer viruses and hacking attacks. As interviewee #33 (female, 41 years) described, she personally feels that a single, static password is too weak. Hackers can easily find a way to crack such a password. Hence, she suggests that additional security measures should be adopted.

Financial risk refers to the possibility of monetary loss due to fraud [46, 47]. The interviewees mentioned financial risk concerns associated with MP. They were afraid thieves and hackers would use illegal means to gain access to their MP accounts and then make unlawful withdrawals, transfers, or purchases. Since MP accounts are linked with at least one bank account, the interviewees were more concerned with the possibility that the compromised MP account would lead to more serious bank fraud. As interviewee #12 (female, 32 years) stated, one of her bank accounts is set up with the direct deposit. If she linked this account to her MP account, she would expose herself to greater financial risk.

Privacy risk refers to the potential loss of control over personal information [46, 47]. To set up an MP account, users need to submit a substantial amount of personal information to the MP company, such as cellphone number, national identification number, and bank account information. Subsequently, the interviewees considered possible negative consequences in case of information leakage. As interviewee #16 (male, 35 years) stated, he is worried that MP companies may accidently release his personal information to unauthorized third parties.

4.3. Dis/confirmation

In the context of MP continuance, the interviewees discussed two dimensions of dis/confirmation. One is

about usefulness and the other about risk of MP technology. The interviewees indicated that they had expectations on PTC, PTS, cost advantages, and ubiquity of MP technology before using it. Their actual use experience largely confirmed their expectations on these aspects. As interviewee #20 (female, 47 years) described, before using MP she often used PC-based payments and felt the process was both awkward and inconvenient. She expected that MP would be simpler and faster. Her expectations were confirmed when she began using an MP application. It took about half a minute to complete her first MP transaction.

The interviewees mentioned that they perceived security, financial, and privacy risks before using MP technology. However, their actual use experience negatively disconfirmed their risk expectations. As interviewee #21 (female, 19 years) described, at first she thought MP technology might not be safe and thus only made small MP transactions. However, after a series of successful transactions, she now feels at ease with MP and has begun to make transactions involving larger amounts.

4.4. Satisfaction

The interviews indicate that two dimensions of satisfaction are important in the MP continuance context. The first dimension is satisfaction due to the confirmation of performance expectations of MP technology (i.e., SAT-PER). As interviewee #10 (female, 23 years) described, she has completed more than 10 MP transactions and has never had a problem. The MP technology always performed as expected. Therefore, she is quite satisfied with the MP technology. The second dimension is satisfaction due to the negative disconfirmation of risk expectations of MP transactions (i.e., SAT-RISK). As interviewee #4 (male, 22 years) described, when initially adopting MP technology, he was concerned about transaction safety and worried about theft from his MP account. However, he did not experience any adverse events when using the MP system and therefore believes MP companies do a good job protecting MP accounts.

4.5. Subjective norm

No subcategories emerged from this category. The interviewees mentioned normative influences on their MP continuance intention. All of them discussed positive subjective norm; that is, their key referent others thought they should continue using MP technology. The key referent others were friends, classmates, or relatives. As interviewee #35 (female, 17 years) described, many of her friends are using MP technology and none of them have ever experienced a problem or difficulty. Hence, she also keeps using MP options.

4.6. Habit

In the context of MP continuance, the interviewees specifically discussed two habits: One is the habit of using MP technology (i.e., H-MP) and the other is the habit of using other payment methods (i.e., H-OTHER), such as cash, PC-based payments, and automatic bill payment.

Some interviewees mentioned that they have developed a high level of dependency on MP in certain payment contexts, such as online shopping, telephone and utilities bill payment, and flight booking. Without conscious intention, the interviewees will automatically choose MP technology to make the payment in these contexts. As interviewee #11 (male, 27 years) described, he has gotten used to shopping online on his cellphone. If he wants to buy something, he will switch on the phone, choose the product, and then make the payment. The whole action sequence is automatic and does not involve much thinking on his part.

Yet, other interviewees discussed that H-OTHER affected their MP continuance intentions and behaviors. Traditional payment methods, such as cash, PC-based payments, and automatic bill payments, have been available long before MP technology becomes a viable payment option. Individuals may have already developed a habit of using these traditional payment method in a particular context. This habit might be so strong that individuals unconsciously overlook an MP solution in that payment context even if it is present. As interviewee #8 (female, 26 years) described, she did purchase books once via cellphone. Even though the experience was successful, she has never done it again because she is so used to buying books on her computer.

5. Discussion

5.1. Implications for research

The results of our study provide rich descriptions about the UMIC constructs in the MP context. Further, the results suggest an augmented UMIC in the MP context, as Figure 1 shows. The dotted ovals and lines in Figure 1 represent the constructs and relationships from the original UMIC, and the solid ovals and lines are new constructs and relationships emerged from our study. We discuss these contributions in more details below.

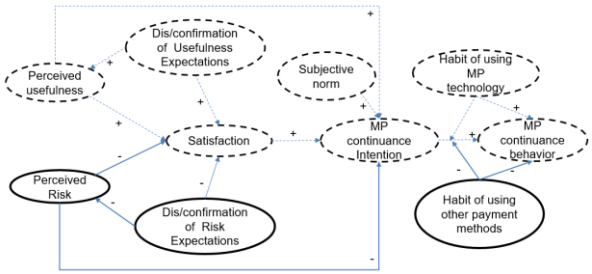

Figure 1. An augmented UMIC in the MP context

First, our study explicates that users perceive the usefulness of MP technology from the dimensions of transaction convenience and speed, cost advantages, and ubiquity. This set of salient dimensions is consistent with the dimension set for other finance-related mobile technologies, such as mobile banking [48], and thus may be generalizable to the category of finance-related mobile technologies. Conversely, this set of salient dimensions is very different from the dimension set for other IT categories, such as the web-based learning system [49]. Our findings, thus, corroborate the necessity of the call to re-conceptualize the perceived usefulness construct for a specific IT category to better capture the distinctive features of that category [22] and also directly answer that call.

Second, the construct of risk has been largely missing in the research on IT continuance. Our findings show that this construct indeed plays an important role in individual MP continuance decisions. Therefore, it is essential to incorporate risk into the UMIC in the context of MP continuance. Furthermore, our findings indicate that specific dimensions of risk are salient in the MP context, including security, financial, and privacy risks.

Third, the construct of disconfirmation occupies a prominent place in the UMIC. Previous IT continuance literature has primarily focused on disconfirmation in terms of positive utility expectations [9, 17, 27], although the valence framework suggests that the negative utility expectations are also a fundamental aspect of decision-making. Our findings show that users consciously consider the possible risk involved in using MP technology before initial adoption. After adoption, they evaluate MP performance against their risk expectations. The disconfirmation of such expectations will, in turn, impact their MP continuance decisions. Therefore, this study suggests that the UMIC could be enhanced through expanded consideration of multiple dimensions of disconfirmation.

Lastly, the construct of habit in the UMIC implicitly refers to the formation of new habits, or how use of a newly introduced IT becomes habit [27]. However, when entrenched behavioral patterns (i.e., "old habits") exist, the reflexive tendency to automatically execute the learned behavior [33] becomes a salient factor in the IT continuance decision. As our study shows, some interviewees are so used to cash and/or PC-based payments that they do not consider using MP technology in some payment scenarios. Therefore, this study suggests the need for further refinement of the UMIC to include the concept of entrenched behavioral patterns or "old habits" as a factor in the IT continuance decision.

5.2. Implications for practice

The findings of this study have several implications for MP companies that strive to elicit continued use of MP technology. First, because users evaluate MP technology in terms of transaction convenience, speed, cost advantages, and ubiquity, MP companies should endeavor to strengthen these aspects of MP technology in relation to traditional payment methods. Second, MP users show great concern about security, financial, and privacy risks when making MP continuance decisions. Therefore, MP companies must take measures to mitigate MP users' risk concerns. Third, habitual use of traditional payment methods (i.e., "old habits") are a major inhibitor to continued MP use. MP companies, thus, need to develop effective strategies to induce individuals to break the old habits.

5.3. Limitations and future studies

This study is focused on MP technology, which is a sub-set of finance-related mobile ITs. Thus, results of this study may not generalize to other IT categories such as hedonistic IT (e.g., online video games) and communication-oriented IT (e.g., electronic mail) [27]. Each IT category has unique features and usage goals which may cause the salient dimensions of perceived usefulness, risk, trust, disconfirmation, and satisfaction to differ from those for MP technology. Therefore, future studies should adapt the above constructs to include the specific dimensions most relevant to the features and usage goals of the technology.

All the interviews in this study were conducted via phone. The literature on communication [50] suggests that nonverbal cues, such as facial expression and gesture, are absent in non-face-to-face communication. Therefore, we may have missed significant information that users consider when making MP continuance decisions, due to the lack of nonverbal cues in the phone interviews. In addition, the interview transcripts were not verified by interviewees for accuracy. Thus, we may misinterpret some of interview data. We

recommend that future research replicate our study by conducting face-to-face interviews and also letting interviewees verify transcript accuracy.

The snowball sampling was used in this study and it was started with a group of university students. As a result, our sample was hardly a representative of the MP user population in China. As Table 1 shows, our sample is predominately composed of users of 18 to 27 years old with college degrees. The results of our study, thus, may only be applicable to this group of MP users in China. We plan to replicate this study using another sample in order to verify the reliability of the findings.

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7. Acknowledgements

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